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FORM PTO-1449 (REV.7-80)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. 690022.547	APPLICATION NO. 09/589,870
SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT <i>(Use several sheets if necessary)</i>		APPLICANTS Stephen C. Goshorn et al.		NOV 09 2000	
		FILING DATE June 5, 2000		GROUP ART UNIT 1643 TECH CENTER 1600/2800	

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
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		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
SR	AI	WO 86/02077	04/10/86	WIPO				
SR	AJ	WO 87/05026	08/27/87	WIPO				
SR	AK	WO 93/24631	12/09/93	WIPO				
SR	AL	WO 95/15770	06/15/95	WIPO				
SR	AM	WO 97/18314	05/22/97	WIPO				
SR	AN	WO 97/19957	06/05/97	WIPO				
	AO							

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

SR	AP		Plückthun and Pack, "New Protein Engineering Approaches to Multivalent and Bispecific Antibody Fragments," <i>Immunotechnology</i> 3:83-105, 1997.
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EXAMINER		DATE CONSIDERED
	<i>1 Rawlings</i>	<i>6/15/01</i>

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SR	AA	4,839,293	06/13/89	Cantor et al.	435	320	
SR	AB	4,867,973	09/19/89	Goers et al.	424	85.91	
SR	AC	4,975,369	12/04/90	Beavers et al.	435	69.1	
SR	AD	5,169,939	12/08/92	Gefter et al.	530	387.3	
SR	AE	5,272,254	12/21/93	Meade et al.	530	350	
SR	AF	5,328,985	07/12/94	Sano et al.	530	350	
SR	AG	5,334,532	08/02/94	Tackney et al.	435	252.33	
SR	AH	5,395,609	03/07/95	Stuttle	424	1.69	
SR	AI	5,530,101	06/25/96	Queen et al.	530	387.3	
SR	AJ	5,630,996	05/20/97	Reno et al.	424	1.49	

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					YES	NO	
SR	AL	EP 496 074 B1	11/20/96	EPO			
SR	AM	EP 682 040 A1	11/15/95	EPO			
SR	AN	WO 95/25167	09/21/95	WIPO			
SR	AO	WO 98/50432	11/12/98	WIPO			
	AP						

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SR	AR	Alfthan et al., "Properties of a Single-Chain Antibody Containing Different Linker Peptides," <i>Protein Eng.</i> 8(7):725-731, 1995.
SR	AS	Argaraña et al., "Molecular Cloning and Nucleotide Sequence of the Streptavidin Gene," <i>Nucl. Acids Res.</i> 14(4):1871-1882, 1986.
SR	AT	Auditore Hargreaves, "Pretarget® Radioimmunotherapy: Preclinical Results with Single-Chain Antibody/Streptavidin Fusion Proteins," Abstract and Slide Presentation, Recombinant Antibodies, June 5-6, 2000, Baltimore, MD.

EXAMINER <i>J. Raudenbush</i>	DATE CONSIDERED <i>6/15/01</i>
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SR	AA	5,696,237	12/09/97	FitzGerald et al.	530	387.3	
SR	AB	5,837,816	11/17/98	Ciardelli et al.	530	350	
SR	AC	5,863,745	01/26/99	Fitzgerald et al.	435	7.21	
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SR	AR	Better, "T-Cell-Targeted Immunofusion Proteins From <i>E. Coli</i> ," <i>Annals N. Y. Acad. Sci.</i> 782:544-54, 1996.
SR	AS	Bird et al., "Single-Chain Antigen-Binding Proteins," <i>Science</i> 242:423-426, 1988.
SR	AT	Boleti et al., "Construction, Expression and Characterization of a Single-Chain Anti-Tumour Antibody (scFv)-IL-2 Fusion Protein," <i>Annals Oncol.</i> 6:945-947, 1995.

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SR		Buchegger et al., "Radiolabeled Chimeric Anit-CEA Monoclonal Antibody Compared with the Original Mouse Monoclonal Antibody for Surgically Treated Colorectal Carcinoma," <i>The Journal of Nuclear Medicine</i> 36(3):420-429, 1995.
SR		Darveau et al., "Expression of Antibody Fragments in <i>Escherichia coli</i> ," <i>J. Clin. Immunoassay</i> 15(1):25-29, 1992.
SR		Desplancq et al., "Multimerization Behaviour of Single Chain Fv Variants for the Tumour-Binding Antibody B72.3," <i>Protein Eng.</i> 7(8):1027-1033, 1994.
SR		Dübel et al., "Bifunctional and Multimeric Complexes of Streptavidin Fused to Single-Chain Antibodies (scFv)," <i>J. Immunol. Meth.</i> 178:201-209, 1995.
SR		Fell et al., "Genetic Construction and Characterization of a Fusion Protein Consisting of a Chimeric F(ab') with Specificity for Carcinomas and Human IL-2," <i>The Journal of Immunology</i> 146(7):2446-2452, 1991.
SR		Filpula et al., "Engineering of Immunoglobulin Fc and Single-Chain Fv Proteins in <i>Escherichia coli</i> ," <i>Antibody Expression and Engineering, ACS Symposium Series No. 604</i> , Chap. 6, pp. 71-82, American Chemical Society: Washington, D.C., 1995.
SR	•	Gallizia et al., "Production of a Soluble and Functional Recombinant Streptavidin in <i>Escherichia coli</i> ," <i>Protein Expr. Purif.</i> 14:192-196, 1998.
SR		Goodwin and Hnatowich, "Tumor Imaging with Indium-Labeled Biotin. Letter to the Editor and Reply," <i>The Journal of Nuclear Medicine</i> 32(4):750-751, 1991.
SR		Goodwin et al., "Pharmacokinetics of Biotin-Chelate Conjugates for Pretargeted Avidin-Biotin Immunoscintigraphy," <i>The Journal of Nuclear Medicine</i> 33(Suppl. 5):p. 880, Abstract No. 232, 1992.
SR	AR	Goshorn et al., "Genetic Construction, Expression, and Characterization of a Single-Chain Anti-Carcinoma Antibody Fused to β -Lactamase," <i>Cancer Res.</i> 53:2123-2127, 1993.
SR	AS	Hand et al., "Comparitive Biological Properties of a Recombinant Chimeric Anti-Carcinoma mAb and a Recombinant Aglycosylated Variant," <i>Cancer Immunology Immunotherapy</i> 35:165-174, 1992.
SR	AT	Huston et al., "Antigen Recognition and Targeted Delivery by the Single-Chain Fv," <i>Cell Biophys.</i> 22:189-224, 1993.

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SR		Huston et al., "Protein Engineering of Antibody Binding Sites: Recovery of Specific Activity in an Anti-Digoxin Single-Chain Fv Analogue Produced in <i>Escherichia coli</i> ," <i>Proc. Natl. Acad. Sci.</i> 85:5879-5883, 1988.
SR		Huston et al., "Protein Engineering of Single-Chain Fv Analogs and Fusion Proteins," <i>Meth. Enzymol.</i> 203:46-89, 1991.
SR		Kalofonos et al., "Imaging of Tumor in Patients with Indium-111-Labeled Biotin and Streptavidin-Conjugated Antibodies: Preliminary Communication," <i>J. Nucl. Med.</i> 31:1791-1796, 1990.
SR		Karp et al., "Identification of Biotinylated Molecules Using a Baculovirus-Expressed Luciferase-Streptavidin Fusion Protein," <i>Biotechniques</i> 20:452-459, 1996.
SR		Kerschbaumer et al., "Single-Chain Fv Fusion Proteins Suitable as Coating and Detecting Reagents in a Double Antibody Sandwich Enzyme-Linked Immunosorbent Assay," <i>Analyt. Biochem.</i> 249:219-227, 1997.
SR		Kipriyanov et al., "Single-Chain Antibody Streptavidin Fusions: Tetrameric Bifunctional scFv- Complexes with Biotin Activity and Enhanced Affinity to Antigen," <i>Hum. Antibody Hybridomas</i> 6(3):93-101, 1995.
SR		Kipriyanov, et al., "Affinity Enhancement of a Recombinant Antibody: Formation of Complexes with Multiple Valency by a Single-Chain Fv Fragment—Core Streptavidin Fusion," <i>Protein Eng.</i> 9(2):203-211, 1996.
SR		Kobayashi et al., "Improved Clearance of Radiolabeled Biotinylated Monoclonal Antibody Following the Infusion of Avidin as a 'Chase' Without Decreased Accumulation in the Target Tumor," <i>J. Nucl. Med.</i> 35:1677-1684, 1994.
SR		Koch and Macke, " ^{99m} -Tc Labeled biotin conjugates in a Tumor 'Pretargeting' Approach with Monoclonal Antibodies," <i>Angew. Chem. Int'l. Ed. Engl.</i> 31(11): 1507-1509, 1992.
SR	AR	Koo et al., "Construction and Expression of a Bifunctional Single-Chain Antibody Against <i>Bacillus cereus</i> Spores," <i>Appl. Environ. Microbiol.</i> 64(7):2490-2496, 1998.
SR	AS	Koo et al., "Development of a Streptavidin-Conjugated Single-Chain Antibody That Binds <i>Bacillus cereus</i> Spores," <i>Appl. Environ. Microbiol.</i> 64(7):2497-2502, 1998.
SR	AT	Kortt et al., "Single-Chain Fv fragments of Anti-Neuraminidase Antibody NC10 Containing Five- and Ten-Residue Linkers Form Dimers and with Zero-Residue Linker a Trimer," <i>Protein Eng.</i> 10(4):423-433, 1997.

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SR		Le et al., "A Streptavidin-Cellulose-Binding Domain Fusion Protein that Binds Biotinylated Proteins to Cellulose," <i>Enzyme Microb. Technol.</i> 16:496-500, 1994.
SR		Lj et al., "Genetically Engineered Brain Drug Delivery Vectors: Cloning, Expression and <i>in vivo</i> Application of an Anti-transferrin Receptor Single Chain Antibody—Streptavidin Fusion Gene and Protein," <i>Protein Eng.</i> 12(9):787-796, 1999.
SR	REB 2/12/99	Lin et al., "A Single Chain Antibody-Streptavidin Fusion Protein for Pretargeted Lymphoma Therapy," Abstract and Poster Presentation, Antibody Engineering, 10th Anniversary Meeting, December 6-9, 1999, La Jolla, CA.
SR		McCloskey et al., "Human Constant Regions Influence the Antibody-Binding Characteristics of Mouse-Human Chimeric IgG Subclass," <i>Immunology</i> 88:169-173, 1996.
SR		Morrison, "Genetically Engineered (Chimeric) Anitbodies," <i>Hospital Practice</i> :65-80, October 15, 1989.
SR		Ohno and Meruelo, "Multi-Drug Delivery System Using Streptavidin-Transforming Growth Factor- α Chimeric Protein," <i>DNA Cell Bio.</i> , 15(5):401-406, 1996.
SR		Ohno et al., "Cell-Specific, Multidrug Delivery System Using Streptavidin-Protein A Fusion Protein," <i>Biochem. Molec. Med.</i> 58:227-233, 1996.
SR		Paganelli et al., "Intraperitoneal Radio-Localization of Tumors Pre-Targeted by Biotinylated Monoclonal Antibodies," <i>Int. J. Cancer</i> 45: 1184-1189, 1990.
SR		Paganelli et al., "Monoclonal Antibody Pretargeting Techniques for Tumour Localization: The Avidin-Biotin," <i>Nuclear Medicine Communications</i> 12:211-234, 1991.
SR	AR	Paganelli et al., "Pilot Therapy Trial of CEA Positive Tumours Using a Three-Step Pretargeting Approach," <i>Tumor Targeting</i> 3:96-104, 1998.
SR	AS	Paganelli et al., "Two-Step Tumour Targetting in Ovarian Cancer Patients Using Biotinylated Monoclonal Antibodies and Radioactive Streptavidin," <i>European Journal of Nuclear Medicine</i> 19:322-329, 1992.
SR	AT	Pearce et al., "Linear Gene Fusions of Antibody Fragments with Streptavidin can be Linked to Biotin Labelled Secondary Molecules to Form Bispecific Reagents," <i>Biochem. Molec. Biol. Int.</i> 42(6):1179-1188, 1997.

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SR		Plückthun, "Antibodies from <i>Escherichia coli</i> ," <i>Nature</i> 347:497-498, 1990.
SR		Plückthun, "Antibody Engineering: Advances from the Use of <i>Escherichia coli</i> Expression Systems," <i>Biotechnol.</i> 9:545-551, 1991.
SR		Press et al., "Treatment of Refractory Non-Hodgkin's Lymphoma With Radiolabeled MB-1 (Anti-CD37) Antibody," <i>Journal of Clinical Oncology</i> 7(8):1027-1038, 1989.
SR		Presta et al., "Humanization of an Antibody Directed Against IgE," <i>The Journal of Immunology</i> 151(5):2623-2632, 1993.
SR		Raag and Whitlow, "Single-chain Fvs," <i>FASEB Journal</i> 9:73-80, 1995.
SR	✓	Sano and Cantor "Expression Vectors for Streptavidin-Containing Chimeric Proteins," <i>Biochem. Biophys. Res. Commun.</i> 176(2):571-577, 1991.
SR		Sano and Cantor, "A Streptavidin-Protein A Chimera that Allows One-Step Production of a Variety of Specific Antibody Conjugates," <i>Biotechnol.</i> 9:1378-1381, 1991.
SR	•	Sano and Cantor, "Expression of a Cloned Streptavidin Gene in <i>Escherichia coli</i> ," <i>Proc. Natl. Acad. Sci.</i> 87:142-146, 1990.
SR		Sano et al., "A Streptavidin Mutant Containing a Cysteine Stretch That Facilitates Production of a Variety of Specific Streptavidin Conjugates," <i>Bio/Technology</i> 11:201-206, 1993.
SR	AR	✓ Sano et al., "A Streptavidin-Metallothionein Chimera that Allows Specific Labeling of Biological Materials with many Different Heavy Metal Ions," <i>Proc. Natl. Acad. Sci.</i> 89:1534-1538, 1992.
SR	AS	✓ Sano et al., "Genetic Engineering of Streptavidin, a Versatile Affinity Tag," <i>J. Chromatogr. B</i> 715:85-91, 1998.
SR	AT	Sano et al., "Molecular Engineering of Streptavidin," <i>Ann. N.Y. Acad. Sci.</i> 799:383-390, 1996.

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SR		Sawyer and Blattner, "Rapid Detection of Antigen Binding by Antibody Fragments Expressed in the Periplasm of <i>Escherichia coli</i> ," <i>Protein Eng.</i> 4(8):947-953, 1991.					
SR		Sawyer et al., "The Effects of Induction Conditions on Production of a Soluble Anti-Tumor sFv in <i>Escherichia coli</i> ," <i>Protein Eng.</i> 7(11):1401-1406, 1994.					
SR		Shan et al., "Characterization of scFv-Ig Constructs Generated from the Anti-CD20 mAb 1F5 Using Linker Peptides of Varying Lengths," <i>J. Immunol.</i> 162(11):6589-6595, 1999.					
SR		Shin et al., "Functional and Pharmacokinetic Properties of Antibody-Avidin Fusion Proteins," <i>J. Immunol.</i> 158(10):4797-4804, 1997.					
SR		Skerra et al., "The Functional Expression of Antibody Fv Fragments in <i>Escherichia coli</i> : Improved Vectors and a Generally Applicable Purification Technique," <i>Biotechnol.</i> 9(3):273-8, 1991.					
SR		Spooner et al., "Expression of Immunoglobulin Heavy Chain-Ricin a Chain Fusions in Mammalian Cells," <i>Molecular Immunology</i> 31(2):117-125, 1994.					
SR		Spooner et al., "Genetically Engineered Antibodies for Diagnostic Pathology," <i>Hum. Pathol.</i> 25:606-614, 1994.					
SR		Stickney et al., "Bifunctional Antibody: A Binary Radiopharmaceutical Delivery System for Imaging Colorectal Carcinoma," <i>Cancer Research</i> 51:6650-6655, 1991.					
SR		Thompson and Weber, "Construction and Expression of a Synthetic Streptavidin-Encoding Gene in <i>Escherichia coli</i> ," <i>Gene</i> 136:243-246, 1993.					
SR	AR	Trang et al., "Pharmacokinetics of a Mouse/Human Chimeric Monoclonal Antibody (C-17-1A) in Metastatic Adenocarcinoma Patients," <i>Pharmaceutical Research</i> 7(6):587-592, 1990.					
SR	AS	Turner et al., "Importance of the Linker in Expression of Single-Chain Fv Antibody Fragments: Optimisation of Peptide Sequence Using Phage Display Technology," <i>J. Immunol. Meth.</i> 205:43-54, 1997.					
SR	AT	Walsh et al., "An <i>Escherichia coli</i> Plasmid Vector System for Production of Streptavidin Fusion Proteins: Expression and Bioselective Adsorption of Streptavidin-β-Galactosidase," <i>Biotechnol. Bioeng.</i> 44:1348-1354, 1994.					
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SR		Weiden et al., "Rhenium-186-Labeled Chimeric Antibody NR-LU-13: Pharmacokinetics, Biodistribution and Immunogenicity Relative to Murine Analog NR-LU-10," <i>J. Nucl. Med.</i> 34:2111-2119, 1993.
SR		Whitlow and Filpula, "Single-Chain Fv Proteins and Their Fusion Proteins," <i>Methods: A Companion to Methods in Enzymology</i> 2(2):97-105, 1991.
SR		Whitlow et al., "An Improved Linker for Single-Chain Fv with Reduced Aggregation and Enhanced Proteolytic Stability," <i>Protein Eng.</i> 6(8):989-995, 1993.
SR		Whitlow et al., "Multivalent Fvs: Characterization of Single-Chain Fc Oligomers and Preparation of a Bispecific Fv," <i>Protein Eng.</i> 7(8):1017-1026, 1994.
SR		Wilcher and Bayer, "Introduction to Avidin-Biotin Technology," <i>Meth. Enzymol.</i> 184:5-13, 1990.
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U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
SR	AA	6,204,023	2/20/01	Robinson et al.	435	17.3	6/9/1995
	AB						RECEIVED
	AC						APR 09 2001
	AD						
	AE						TECH CENTER 1600/2900
	AF						
	AG						
	AH						
	AI						
	AJ						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION
					YES
	AK				
	AL				
	AM				
	AN				
	AO				

OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	AP		
	AQ		
	AR		

EXAMINER <i>J. Randolph</i>	DATE CONSIDERED <i>6/15/01</i>
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* EXAMINER: Initial if reference considered, whether or not criteria is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant(s).